

REPORT ON THE PROGRESS OF THE DEPARTMENT OF NATURAL RESOURCES' REVIEW OF THE PROPOSED CRANDON MINE & OTHER MINING ISSUES: November 1998

Department of Natural Resources
Box 7921, Madison, WI 53707
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Since the Department's last status report in April, there have been many changes in the Crandon Mine project proposal. Nicolet Minerals Company, a subsidiary of Rio Algom Limited, has made new proposals in several areas such as pyrite separation, mine operation, and wastewater disposal. In addition, the passage of the Mining Moratorium Law has added a new requirement that a company must meet in order to obtain a mining permit in Wisconsin. This is the eighth in a series of Crandon Mine status reports. The Department is releasing this update to inform the public of new aspects of the project and the general status of the Crandon Mine permit review process.

1) Mining Moratorium

The Mining Moratorium Law was signed by the Governor on Earth Day in April. The moratorium law provides an additional requirement that a mining applicant must meet in order to receive a mining permit. A mining company must submit data for a mine that has been closed for ten years without causing significant environmental pollution, and a mine that has operated for ten years without causing pollution. The candidate mines identified by the company must be sulfide ore bodies that, together with the host rock, have the potential to create acid runoff. The Department will include a discussion of these sites and a summary of the supporting information in the Draft and Final Environmental Impact Statements. However, the final decision about whether these sites meet the intent of the Mining Moratorium Law will be made by the Hearing Examiner and will be based on the record developed at the Master Hearing.

The company has not yet provided the Department with the candidate mines necessary for compliance with the moratorium law. In addition, the company has not revised or updated many of its required studies, facility designs and reports that must be submitted to us before the Department can complete its review (see item #4 in this update). Until the Department has received all of these reports and studies, including the candidate mines required by the moratorium law, a draft environmental impact statement (DEIS) will not be issued.

There have been requests to the Department to stop review of the mining permit application until the mining company submits acceptable sites under the moratorium law. However, the moratorium law contains no language authorizing the Department to stop its review of information already submitted. The moratorium law states that the Department may not issue a permit unless the criteria mentioned are satisfied. The moratorium law does not say that the information must be submitted before the Department can review other aspects of the project.

Therefore, by law, the Department will continue processing the mining permit application with or without receipt of the mining moratorium information.

Nicolet Minerals Company (NMC) has indicated that it will provide the necessary information to the Department before the end of 1998. The Department will make NMC's mining moratorium submittal available for public review and comment as soon as it is received. The DEIS will also contain a list of the candidate sites and a summary of the accompanying groundwater or surface water information. The public, tribes, municipalities and agencies will have ample opportunity to provide review comments to the Department on the candidate sites, throughout the entire process.

2) New project changes announced by the company

a) Wastewater discharge to soil absorption site rather than to the Wisconsin River

The company has decided not to pursue the wastewater discharge pipeline to the Wisconsin River as its preferred alternative. NMC has indicated that its preferred alternative now is to discharge treated water to an absorption site much closer to the project site. Although the preferred location has not yet been announced, the company has notified the Department that it is evaluating several potential sites. Since none of the potential sites are outside of the Wolf River watershed, there would no longer be an inter-basin transfer of water should the absorption site alternative be approved and built.

Specific plans for the absorption site have not yet been submitted; however, discharge to an absorption site would require a much higher degree of wastewater treatment than was proposed for the Wisconsin River discharge. This is true primarily because water released to an absorption system would eventually contact groundwater and therefore must comply with groundwater standards. For most pollutants, those standards are more stringent than the surface water quality standards for the Wisconsin River. The company is studying additional treatment methods, including reverse osmosis and evaporation techniques, which it would have to use in addition to the lime sulfide precipitation already proposed. It has not yet announced its preferred technique to obtain a higher quality effluent.

The Wisconsin River discharge pipeline concept will be kept in the proposal as an alternative to the absorption site discharge, and will be discussed in the Environmental Impact Statement (EIS) in that manner. (The last chapter of the EIS will be devoted to considering alternatives for various aspects of the project.)

b) Pyrite separation

NMC has proposed an additional processing step during the mineral concentration - the separation of pyrite. The separation would be a flotation process similar to that proposed for the concentration of copper, zinc, and lead minerals. The pyrite concentrate would be placed back in the mine as cemented backfill, while the remaining tailings would be sent to the tailings

management area (TMA) on the surface. The company plans to incorporate this new feature into its Mine Permit Application.

The environmental concern for pyrite revolves around the potential for sulfide minerals, such as pyrite, to oxidize - forming acid and releasing metals. Acid formation can only happen in the presence of oxygen and water. In the re-flooded underground mine, oxygen would be very limited, so acid production would be minimal. Tests will be conducted on the resulting pyrite concentrate and on the remaining tailings to be sent to the TMA, to determine their mineralogic and chemical characteristics. The Department will be studying how the pyrite-rich backfill in the mine might affect groundwater in the region after the mine is closed and flooded. The results of this analysis will be included in the DEIS.

One very visible effect of the pyrite separation would be a reduction in the size of the proposed TMA. The area and volume of the TMA is expected to be reduced by approximately 25% from the original proposal. The company is evaluating reducing the area of disturbance in the adjacent Bur Oak Swamp watershed. (Bur Oak Swamp is a unique, high quality wetland.)

c) Paste backfill

The company is proposing to use paste backfill technology to refill the mine once the ore has been removed. Cement would be added to the pyrite concentrate at a paste plant in the mill. The paste backfill would be much thicker than the previously proposed coarse tailings slurry backfill, because most of the water would be removed. The company cites two advantages of this technology: an ability to put more fill into the underground cavities and a decrease in water draining from the backfill. The Department will discuss this proposal further in the DEIS.

d) Grouting

The company has decided to implement a more intensive grouting plan in order to reduce the amount of water that would flow into the mine from the overlying glacial aquifer. It plans to install a 'grout curtain' over the ore body in stages during underground mining. Grouting involves injecting low permeability materials, such as cement, under pressure through boreholes to fill voids and fractures in the rock. The company's test results indicate that this would reduce water inflow into the mine by nearly one-third. Less water draining into the mine would result in less water needing to be treated and discharged, and would also reduce the resultant impacts to surface water bodies in the area. The Department's analysis of this proposal will be included in the DEIS.

3) Groundwater Modeling Update

The Department, with the assistance of its consultants, is continuing its review of the most recent version of the regional groundwater flow model, received in September 1998.

This new version of the groundwater model includes a more detailed representation of the bedrock and the complete depth of the proposed mine. It also incorporates more directly the

proposed mining plan and the company's recently proposed mine grout plan. In addition, the new version of the model incorporates changes that the Department requested at the June technical meeting involving the distribution of water entering the model.

An updated version of the TMA solute transport model was received in April 1998. However, since this work is based on the regional flow model and the regional flow model has been changed since then, we expect that the company will revise the solute transport model in the near future.

4) Schedule

On June 30, the DNR sent a letter to the Nicolet Minerals Company which outlined the requirements necessary for the Department to complete the DEIS. The changes that have occurred in the project proposal since its initial submission have necessitated revisions in nearly all the documents that have been submitted. In order for the Department and the general public to be able to understand and review the proposal, the company must submit revisions or updates to the following documents:

1. The groundwater flow model (which has since been submitted) and solute transport model reports;
2. The Mine Permit Application;
3. The Preliminary Engineering Report for Wastewater Treatment Facilities;
4. The Surface Water Mitigation Plan;
5. Revised or new WPDES permits as necessary;
6. Narrative portions of the Environmental Impact Report, Volumes I and II;
7. Notice of Intent for Storm Water Discharge
8. TMA Feasibility Report

In addition, we informed the company that a discussion of its attempt to comply with the Mining Moratorium will be included in the DEIS. This will require the company to provide information on its selected sites and appropriate groundwater and surface water data for those sites (See item #1 in this update).

The Department has announced that it will publish the DEIS four months after the necessary information has been received and verified. All of the above information must be received before the allotted four month period will begin.

5) Billing NMC for \$1.1 million

Wisconsin Act 169 (Assembly Bill 488), requiring a mining company to make annual payments to the Department for permit review-related costs, was signed by the Governor and became effective on May 7, 1998. Previously, a mining applicant had to make regular payments to the Department to compensate for the cost of preparing the environmental impact statement, but could wait until the project review was complete to pay its outstanding balance on costs associated with permit review. This new law allowed the Department to send Nicolet Minerals Company a bill for \$1.1 million, charged for work done on permit review beginning February 15, 1994 and continuing through December 1997. The bill was sent on June 6 and was paid on

August 7. The Department will continue to bill the company annually as long as permit review activities proceed.

6) Department's Web site on-line

The Department has developed a World Wide Web site that offers information on the regulation of mining in Wisconsin. This Web site is intended to help promote greater public understanding of how metallic mining is regulated in Wisconsin, as well as how the DNR is progressing in its review of current mining proposals. From the introductory page users can also link to the U.S. EPA and U.S. Army Corps of Engineers Web sites pertaining to review of the proposed Crandon mine. Viewers may also gain access to this page via the DNR Home page and then clicking in succession the links to Environmental Protection, Land, and Mining in Wisconsin.

Among the specific items available at this site (mainly in the form of portable document format or PDF files in Adobe Acrobat) are:

- a series of mining information documents that delve in detail into the topics of what state mining laws require, how DNR regulates metallic mining, and opportunities for local involvement in mining issues;
- state statutes and links to administrative rules pertaining to the regulation of metallic mining;
- periodic updates on the status of the DNR review of the proposed Crandon mine;
- public comments and questions voiced at public meetings held at seven sites across northeastern and north central Wisconsin, with detailed Department responses;
- comment and review letters by public agency staff and consultants examining the Crandon mine proposal; and
- a timeline showing the schedule for steps that DNR review staff will complete once NMC submits all required information.

A summary of the pending revisions to the environmental impact report will be added once the Nicolet Minerals Company specifies the nature of these revisions to the mining project.

This site can be expanded over time to meet the needs of users. The Department welcomes suggestions regarding additional information to include on the Web page. Interested users can make requests to Dave Kunelius in Rhinelander at (715) 365-8924.

7) Other Mining News

a) Noranda billing

In 1996 the Department billed Noranda \$303,000 for permit-related costs associated with DNR staff time reviewing the company's Lynne Project. Noranda has not paid the bill. The Department referred the case to the Department of Justice, which met with company attorneys to attempt to resolve the situation. Since those meetings did not result in an agreement on payment, the Department of Justice has filed suit in Dane County Circuit Court against Noranda to recover the money.

b) Flambeau reclamation

The Flambeau mine is nearly finished with its reclamation plan and will complete the work next spring. The final reclamation involved several minor plan revisions. Several citizens raised concerns about the proposed changes, and a negotiation process between those citizens, the company, and the Department yielded an outcome that was satisfactory to all of the participants. Part of the agreement between the interested public and the company involved items such as removing all of the internal workings of the wastewater treatment facility to decrease the likelihood of another discharge ever happening at that location on the Flambeau River, and to use controlled burning as part of the initial plan rather than using a mowing technique to maintain grassland habitat.

The original reclamation plan filed with the Department calls for the buildings on site to be removed. Under the modified Reclamation Plan, the buildings and associated facilities will remain in place for use by the Ladysmith Community Industrial Development Corporation (LCIDC). The mining company and the LCIDC have entered into a lease under which the property may be put to alternative use. The LCIDC is presently looking for businesses interested in relocating to the former mine project area.

For More Information, please contact:

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